

WHAT IS CLAIMED IS:

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1. A method for producing a semiconductor device comprising:
a step of forming a first conductive layer;
a step of forming an insulating layer over said first conductive layer;
a step of forming an opening in said insulating layer to expose said
first conductive layer at a bottom of said opening;
a step of forming an embedded conductive layer to cover said
insulating layer and said opening;
a step of etching or polishing said embedded conductive layer to
make a state in that only said opening is filled with said embedded conductive layer;
and
a step of forming a second conductive layer on said insulating layer
and said embedded conductive layer.
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2. A method for producing a semiconductor device comprising:
a step of forming a first conductive layer;
a step of forming an insulating layer over said first conductive layer;
a step of forming an opening in said insulating layer to expose said
first conductive layer at a bottom of said opening;
a step of forming an oxide conductive layer by a spin coating method
to cover said insulating layer and said opening;
a step of etching or polishing said oxide conductive layer to make a
state in that only said opening is filled with said oxide conductive layer; and
a step of forming a second conductive layer on said insulating layer
and said oxide conductive layer.
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3. A method for producing a semiconductor device comprising:
a step of forming a first conductive layer;
a step of forming an insulating layer over said first conductive layer;

a step of forming an opening in said insulating layer to expose said first conductive layer at a bottom of said opening;

a step of forming an embedded conductive layer to cover said insulating layer and said opening;

5 a step of forming a second conductive layer on said embedded conductive layer;

a step of patterning said second conductive layer to a desired pattern;

and

10 a step of etching said embedded conductive layer by using said second conductive layer as a mask in a self alignment manner.

4. A method for producing a semiconductor device comprising:

a step of forming a first conductive layer;

a step of forming an insulating layer over said first conductive layer;

15 a step of forming an opening in said insulating layer to expose said first conductive layer at a bottom of said opening;

a step of forming an oxide conductive layer by a spin coating method, to cover said insulating layer and said opening;

a step of forming a second conductive layer on said oxide conductive layer:

20 a step of patterning said second conductive layer to a desired pattern,

and

a step of etching said oxide conductive layer by using said second conductive layer as a mask in a self alignment manner.

25 5. A method for producing a semiconductor device according to claim 1, wherein said embedded conductive layer comprises an organic resin film containing a conductive material dispersed therein or an inorganic film containing a conductive material dispersed therein.

6. A method for producing a semiconductor device according to claim 3, wherein said embedded conductive layer comprises an organic resin film containing a conductive material dispersed therein or an inorganic film containing a conductive material dispersed therein.
- 5 7. A method for producing a semiconductor device according to claim 5, wherein said conductive material is a carbon material.
8. A method for producing a semiconductor device according to claim 6, wherein said conductive material is a carbon material.
- 10 9. A method for producing a semiconductor device according to claim 5, wherein said conductive material is selected from the group consisting of zinc oxide, aluminum flakes and nickel flakes.
10. A method for producing a semiconductor device according to claim 6, wherein said conductive material is selected from the group consisting of zinc oxide, aluminum flakes and nickel flakes.
- 15 11. A method for producing a semiconductor device according to claim 2, wherein said oxide conductive layer comprises indium tin oxide.
12. A method for producing a semiconductor device according to claim 4, wherein said oxide conductive layer comprises indium tin oxide.
- 20 13. A semiconductor device according to claim 1, 2, 3, 4, 5 or 6 is applied to an EL display device.
14. A method for producing a semiconductor device comprising:
a step of forming a first conductive layer;

a step of forming an insulating layer over said first conductive layer;
a step of forming an opening in said insulating layer to expose said
first conductive layer at a bottom of said opening;

5 a step of forming a second conductive layer to cover said insulating
layer and said opening;

a step of polishing said second conductive layer by employing a
chemical mechanical polishing; and

a step of forming a third conductive layer on said insulating layer and
said second conductive layer.

10 15. A method for producing a semiconductor device comprising:

a step of forming a first conductive layer;

a step of forming an insulating layer over said first conductive layer;

15 a step of forming an opening in said insulating layer to expose said
first conductive layer at a bottom of said opening;

a step of forming an oxide conductive layer to cover said insulating
layer and said opening;

a step of polishing said oxide conductive layer by employing a
chemical mechanical polishing; and

20 a step of forming a second conductive layer on said insulating layer
and said oxide conductive layer.

16. A method for producing a semiconductor device according to claim
14, wherein said second conductive layer comprises an organic resin film containing
a conductive material dispersed therein or an inorganic film.

25 17. A method for producing a semiconductor device according to claim
16, wherein said conductive material is a carbon material.

amb33 → 18. A method for producing a semiconductor device according to claim 14, wherein said conductive material is selected from the group consisting of zinc oxide, aluminum flakes and nickel flakes.

5 19. A method for producing a semiconductor device according to claim 13, wherein said oxide conductive layer comprises Midium tin oxide.

amb33 → 20. A method for producing a semiconductor device according to claim 1, 2, 3, 4, 14 and 15, wherein said semiconductor device is applied to a display device of a cellular phone.

10 21. A method for producing a semiconductor device according to claim 1, 2, 3, 4, 14 and 15, wherein said semiconductor device is applied to a display device of a camcorder.

22. A method for producing a semiconductor device according to claim 1, 2, 3, 4, 14 and 15, wherein said semiconductor device is applied to a display device of a portable computer.

15 23. A method for producing a semiconductor device according to claim 1, 2, 3, 4, 14 and 15, wherein said semiconductor device is applied to a display device of a head mounting display.

20 24. A method for producing a semiconductor device according to claim 1, 2, 3, 4, 14 and 15, wherein said semiconductor device is applied to a display device of a rear type projector.

25. A method for producing a semiconductor device according to claim 1, 2, 3, 4, 14 and 15, wherein said semiconductor device is applied to a display device of a front type projector.

26. ~~A method for producing a semiconductor device according to claim 1, 2, 3, 4, 14 and 15, wherein said semiconductor device is applied to an EL display device.~~

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